Claims

1. An optical information transmission system having a plurality of optical transmitters (1) and receivers (2), each having ports (5, 16) for interchangeable waveguides (6), wherein each optical transmitter (1) has an input (9) for receiving an enable signal associated to it, and the transmitter (1) is adapted to generate or not to generate an optical information signal according to the status of the enable signal, wherein a signal generator (21, 24) for generating such an enable signal ($\overline{D}$=1) is associated to each optical receiver (2), and wherein the status of the enable signal indicates whether the receiver (2) is connected to a transmitter (1) by a waveguide (6) or not,
characterized in that
each signal generator (21, 24) is connected to one enable input (9) by an enable control line (15) wired independently from the waveguides (6) and is adapted to generate the enable signal ($\overline{D}$ = 1) only if a test signal specific for said receiver (2) has before been received at its waveguide port (16).

2. An optical information transmission system according to claim 1, characterized by means for transmitting a description of the specific test signal of a receiver (2) to the associated transmitter (1).

3. An optical information transmission system according to claim 2, characterized in that each receiver (2) has a

memory (23) associated to it for storing the description of its test signal.

4. An optical information transmission system according to claim 2, characterized in that each receiver (2) has a random generator (26) associated to it for randomly generating the description of its test signal.

5. An optical information transmission system according to claim 2, characterized in that it comprises a central unit (27) for assigning to each receiver (2) a test signal description specific for that receiver (2).

6. An optical information transmission system according to one of claims 2 to 5, characterized in that the means for transmitting a description of the test signal is the enable control line (15).

7. An optical information transmission system according to claim 6, characterized in that the enable control line is adapted to assume two levels.

8. An optical information transmission system according to one of claims 2 to 7 , characterized in that the test signal is adapted to be described by a digital number.

9. An optical information transmission system according to claim 8, characterized in that the transmitter (1) comprises an encoder (11, 4) for encoding the digital number into the test signal, and that the receiver (2) has a decoder (20, 21) for extracting the number encoded in the test signal.

10. An optical information transmission system according to one of claims 2 to 6, characterized in that the test signal is adapted to be described by at least one instant at which it changes its level.

11. An optical information transmission system according to one of the preceding claims, characterized in that each transmitter (1) transmits the test signal with a lower average power than the information signal.

12. An optical information transmission system according to one of the preceding claims, characterized in each transmitter (1) comprises a laser (3) and an amplifier (4) connected between the laser (3) and the waveguide port (5) of the transmitter (1), and that the laser is operable only in presence of the enable signal ($\overline{D}$ = 1).

13. An optical information transmission system according to one of the preceding claims, characterized in that the transmitters (1) and receivers (2) are located on circuit boards mounted on a backplane, and that the enable control lines (15) extend along the backplane.

14. Transmitter for an optical information transmission system, in particular according to one of the preceding claims, having an optical output port (5), an enable signal input (9) and a modulated radiation source (3, 4) for providing an optical information signal at the optical output port (5) when an enable signal ($\overline{D}$ = 1) is present at the enable control input (9) of the transmitter (1), characterized in that the radiation source (3, 4) is adapted to output a coded optical test signal at the output port (5) when the enable signal ($\overline{D}$ = 1) is not applied.

15. A receiver for an optical information transmission system, in particular according to one of claims 1 to 13, comprising an optical input port (16), an enable signal output and a decoder (21, 22, 23, 24) for comparing a code contained in a test signal applied to the input port (16) with an expected code and generating the enable signal upon coincidence of the codes.

16. A method for suppressing unprotected emission of information signals from transmitters (1) of an optical information processing system in which each transmitter (1) is connected to an associated receiver (2) by an enable control line (15) so as to control enablement of the emission and is adapted to be connected to it by an optical waveguide (6), having the steps of:

a) outputting, by transmitter (1), an optical test signal specific for the associated receiver (2);

b) examining the test signal incident at the receiver (2); and

c) if it is found that the test signal has arrived at the receiver (2), enabling transmission of the information signal.

17. The method of claim 16, characterized in that steps a) to c) are carried out when the waveguide (6) has been detected to be connected to the receiver (2).

18. The method of claim 16, characterized in that it is carried out in an initial operation phase of the system.

19. The method of claim 16, 17 or 18, characterized in that a description of the test signal is transmitted beforehand from the receiver (2) to the associated transmitter (1).

20. The method of claim 19, characterized in that a digital number is transmitted as the description, and that in step b), the test signal is found to have arrived if the same number is decoded in the test signal.

21. The method of claim 19, characterized in that a signal having a level change at determined time intervals is transmitted as the description, and that in step b) the test signal is found to have arrived if in the test signal level changes are observed in the same time intervals.

22. The method of one of claims 17 to 21, characterized in that the information signal is coherent and the test signal is incoherent.